

Third West Weekly Report
Shepherd, Michael

124 1 190 - R8 SDMS

to:

Joyce Ackerman, 'Craig Barnitz (cbarnitz@utah.gov)' 02/21/2012 11:16 AM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)" <cbarnitz@utah.gov>

History: This message has been replied to.

7 Attachments

PDF

Weekly Report 02-13 to 02-17-12.pdf Third West Weekly Log 2011-07.pdf 229700-1.pdf 229783-1.pdf

229871-1.pdf 229965-1.pdf 230091-1.pdf

Joyce & Craig,

Attached are the reports for the week of February 13, 2012.

All air monitoring results came back negative.

Please let me know if you have any questions.

Thanks,

Mike Shepherd Project Manager Rocky Mountain Power - Major Projects 801.220.4584 Office 801.631.1310 Cell 801.220.2797 Fax michael.shepherd@pacificorp.com





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

		DAILT CHECKLIST
DATE	:	02/13/11
Ge	<u>neral</u>	
		area Health and Safety Inspection
NA		Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
117	•	activities for the day
NA		Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
		to commencement of any site work. Instruction, review hazards, health & safety issues
		and any modifications to the CSHASP
NA		Site hazard and safety instruction for all first time employees, contractors or visitors
NA		Complete Employee Meeting Record Form B (where applicable)
NA		Document required Respirator Training completion with Form H
NA		Record times and numbers of dump trucks and trailers as they leave the site with
М		contaminated material.
NA		Confirm return of waste material manifest documents for each load with site
М		manager.
NA	Compl	ete all CSHASP Forms (for applicable activities planned for that day)
1471	NA NA	Illness/Injury Report Form A .
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
	\square	Exclusion zone operations are practiced as instructed.
	لسنا	Decontamination unit is working properly.
		✓ Workers are using decontamination unit as instructed.
		✓ Workers use personal protective equipment properly.
		Workers use personal protective equipment property.
		Set air samples at cardinal compass points around exclusion zone. Check
		throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation
		sites and track out prevention.
		Review sign-in/sign-out log throughout and at the end of the workday.
\square		Secure the site at the end of the workday
		Social the site at the end of the Workland
Sa	mpling	
NA	Soil Co	onfinnation sampling for any newly excavated areas
$\overline{\mathbf{A}}$		Stationary Air Monitoring during contaminated soil removal around the perimeter of the
		exclusion zone
N.A	\	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
		removal
NA	Ň	Digitally photograph each sample location and at any place field sampling personnel
		determined necessary





\square	Electronically file photo files into the on-site database
\square	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
☑	Logbook
abla	On-site computer database
\square	Label each sample media with a unique number
\square	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Ø	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
\square	Review and disseminate sample results as received from the laboratories to Project
	Manager and other appropriate managers and employees
☑	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 02/13/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	4
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	×		х) <u>N</u>
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.		3	x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	X	,		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	-
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			ė
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х	3		
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	х			*
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone suspended to accommodate for re-aligning fencing and transferring decontamination unit. Newman workers worked around exposed native soil.

CVE fabricators continued forming and preparing for 2nd transformer.

Precipitation from the previous weekend created wet soil conditions so dust was not observed in the yard.

Weather was dry and sunny throughout the day with highs in the 40's.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	02/14/11
Comenal	
General NA Worl	c area Haalth and Cafaty Ingression
NA WOII	c area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
NA	
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
	to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA NA	Complete Employee Meeting Record Form B (where applicable)
NA NA	Document required Respirator Training completion with Form H
NA NA	Record times and numbers of dump trucks and trailers as they leave the site with
	contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
. 12 %	manager.
NA Com	plete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
☑	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
\square	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
	Review sign-in/sign-out log throughout and at the end of the workday.
\square	Secure the site at the end of the workday
<u>Samplin</u>	g
NIA C-11	
	Confirmation sampling for any newly excavated areas
☑	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	•
ITA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel
11/1	determined necessary





		Electronically file photo files into the on-site database
		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	$\overline{\mathbf{A}}$	Logbook
	$\overline{\mathbf{A}}$	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
Ø		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
$\overline{\Delta}$		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Ø		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 02/13/12			
Location: 3rd West, 1st South, SLC	Job Number:			
Survey Conducted By: <u>Justin Kargis</u>	Title:			

] In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			X	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

] In Compliance	Out of Compliance] N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.	I.		x	
1926,1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	a a
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance] N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х	ž		
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	х		2	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Exclusion zone suspended to accommodate for re-aligning fencing and transferring decontamination unit.

Newman workers worked around exposed native soil and had to move an excavator from the new EZ into the area south of the 2nd transformer. Newman workers attempted to clean the tracks but this tracked contaminated material into the clean zone. Once the spread footing areas were excavated, Newman removed and covered this material with clean fill.

CVE electricians re-connected the power to the decontamination unit. Newman filled the water tank so the unit is functioning again.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

OATE:	02/15/11
<u>General</u>	
	area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors price to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA -	Confirm return of waste material manifest documents for each load with site
. •	manager.
•	lete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
\square	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
◪	Secure the site at the end of the workday
Sampling	

	·
NA	Soil Confirmation sampling for any newly excavated areas
Ø	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





Ø		Electronically file photo files into the on-site database
Ø		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	$\overline{\mathbf{Q}}$	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
Ø		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
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Project: 3rd West Sub Station	Date: 02/15/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	•
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
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1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
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1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	12	£	x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
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1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	,
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			9
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			,
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.	ē		x	

Standard	Title	☐ In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
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1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

Standard	Title	In Compliance	Out of Compliance	U/A	Corrective Action Taken and Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	X _z			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	,

Exclusion zone suspended to accommodate for re-aligning fencing and transferring decontamination unit. No work done in EZ today.

RMP tech operations crew removed batteries from old control building.

CVE fabricators poured pedestal for 2nd transformer and spread footings starting at 10:00.

Newman continued excavating around 46kV vaults and placed conduit for lines.

Bi-Weekly meeting discussions covered continued efforts and improvement in exclusion zone and environmental practices. Discussed altering EZ boundaries and transferring decontamination unit.

Discussions between CVE, R&R, and Eagle Environmental about demolition notification for old control building. Eagle was tasked with determining if the previous notification could still be applied or if a new one is required.

Snow and rain mix until around 9:45. Partly cloudy for the rest of the day. Highs around 40 F.



NA

determined necessary



3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAIL I CHECKLIST
DATE:	02/16/11
General	
	k area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
1421	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
	manager.
NA Com	plete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
. NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
. 🗹	Exclusion zone operations are practiced as instructed.
_	Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
	Workers use personal protective equipment properly.
\square	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
☑	Secure the site at the end of the workday
<u>Samplir</u>	<u>ıg</u>
NA Soil	Confirmation sampling for any newly excavated areas
7	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil

Digitally photograph each sample location and at any place field sampling personnel





	Electronically file photo files into the on-site database
☑	Complete Field Documentation
\square	Field Sample Data Sheets (FSDS)
\square	Logbook
\square	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
Ø	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
\square	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
\square	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
$\overline{\mathbf{A}}$	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 02/16/12		
Location: 3rd West, 1st South, SLC	Job Number:		
Survey Conducted By: <u>Justin Kargis</u>	Title:		

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	Date
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x	4		
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.		5	х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.		2	х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	a a
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			*
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	Title	In Compliance	Out of Compliance	O N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x	v		
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х		20	
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

] In Compliance	Out of Compliance] N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.		Ε.	x	

Exclusion zone activated once excavations began.

Newman altered the EZ and began digging for vaults south of the 46 kV vaults. They also continued removing fill around the 46kV vaults in preparation for flow fill.

Newman cleaned some minimal track out in the parking lot that had come off their excavator.

CVE fabricators worked on rebar and preparing to pour piers on spread footings.

Weather was dry and sunny with highs near 40 F.



determined necessary



3RD WEST SUBSTATION REMEDIATION PROJECT **HEALTH SAFETY MANAGER (HSM)**

		DAILY CHECKLIST
DATE	: <u></u>	02/17/11
·	امسمس	
	neral	area Health and Safety Inspection
		Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
NA	1	
NI A		activities for the day Sofity Planning or "Toilgate" mandatory manting for all ampleyees and contractors prior
NA	`	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA		Site hazard and safety instruction for all first time employees, contractors or visitors
NA		Complete Employee Meeting Record Form B (where applicable)
NA		Document required Respirator Training completion with Form H
NA	•	Record times and numbers of dump trucks and trailers as they leave the site with
1 42 %		contaminated material.
NA		Confirm return of waste material manifest documents for each load with site
1 1/1 %		manager.
NA	Compl	ete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
	☑.	Exclusion zone operations are practiced as instructed.
		Decontamination unit is working properly.
		☑ Workers are using decontamination unit as instructed.
		☑ Workers use personal protective equipment properly.
☑		Set air samples at cardinal compass points around exclusion zone. Check
		throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation
_		sites and track out prevention.
☑		Review sign-in/sign-out log throughout and at the end of the workday.
☑		Secure the site at the end of the workday
<u>Sa</u>	.mpling	
NA	Soil C	onfirmation sampling for any newly excavated areas
☑		Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
N	4	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
N	A	Digitally photograph each sample location and at any place field sampling personnel





Ø		Electronically file photo files into the on-site database
\square		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	\square	On-site computer database
$\overline{\mathbf{A}}$		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
\square		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 02/17/12		
Location: 3rd West, 1st South, SLC	Job Number:		
Survey Conducted By: _Justin Kargis	Title:		

] In Compliance	Out of Compliance] N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	1
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х		40	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.		ā	х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	5
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	Title	☐ In Compliance	Out of Compliance	N/A	Corrective Action Taken and
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x		=	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x	Ξ		
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			7
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Comments:

Exclusion zone activated once excavations began.

Cache Valley Electric surveyors entered the contaminated zone before excavations began to shoot some lines for placement of equipment.

Newman placed vaults at the corner of the north arm of the yard. They filled in the area of the old switch gear basement with native soil in preparation for more stock piling.

CVE fabricators continued forming rebar for pillars set on spread footings.

Weather was mild and mostly sunny with temperatures around 40.

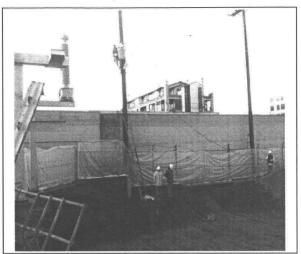


PHOTO 1



РНОТО 2



РНОТО 3



РНОТО 4

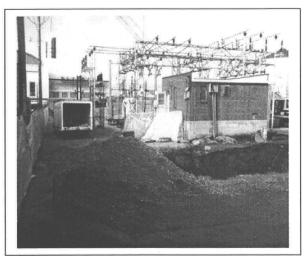
R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

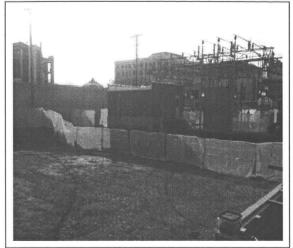
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 02/13/12	FILE:	

SITE PHOTOGRAPHS









РНОТО 6

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

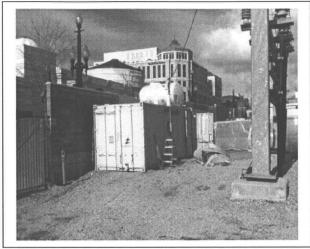
DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 02/13/12	FILE:

SITE PHOTOGRAPHS

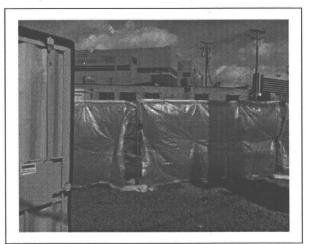




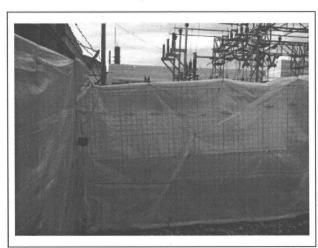
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & Renvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 02/14/12	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

		8
DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 02/15/12	FILE:

SITE PHOTOGRAPHS





РНОТО 1



PHOTO 2



РНОТО 3

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE: REVIEWED BY: DCR

DRAWN BY: DATE FILE:

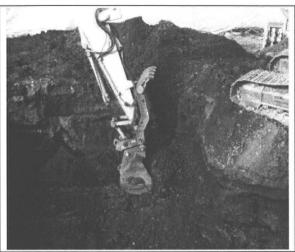
JMK 02/16/12

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR		
DRAWN BY: JMK	DATE 02/17/12	FILE:		

SITE PHOTOGRAPHS



PROJECT NAME:	Third W	DATE: Monday, February 13, 2012				
PO & Work Order NO. :	3000078	8050 / 10035803	MAIN CONT	RACTOR :	Cache Valley Electr	
Crew Start Time:	7:00	Crew Stop Time:	17:10		Tot Hrs mns:	10:10
FCR Start Time:	6:50	FCR Stop Time:	17:15		Tot Hrs mns:	10:25
Use military time format 00:00		-				
		•	•			
WEATHER CONDITIONS:		Partly Cloudy, 35 d	egrees in AM - 4	5 degrees	in PM	
DESCRIPTION: (work perfo						
new exclusion zone. CVE Line C working on the west transformer with Scott Collard and it was dete Eagle Environmental cleaned out rack and charger. Dave, with Ce 241-3943) CVE Fab Crew	pedestal, placing ermined that CVE the battery room ntury Link, author	anchor bolts, completing rebar will modify the lids on the vault in the old control building. RMI	alignment and squ s inside the northw P will tve here on V e the communicati	aring up the rest gate to a Vednesday A on lines to th	form. John Ma allow for road in AM to remove the ne old control b	ancini met stallation. ne batteries,
				•		
IF WORKING IN ENERGIZED	SUBSTATION	N:				
Dispatcher login, name and time:		nez 0650				
Dispatcher logout, name and time	e: Gus Monta	nez 1710				
DISCREPANCIES:	_		IMMEDIATE CO	DRRECTIV	E ACTION TA	KEN:
		•				
11/30 - Identified an additional retaini Demo Plan.	ng wall that is below	w grade and does not show on the	Will excavate to det	ermine dimen	sions.	
· ·						
12/15 - Excavated to locate the 46 k\ didn't find them. Will try again. Actui DELAYS OR LOST TIME EN	al deoth will be muc	ch deeper than design of new bank	Sent e-mail to Roge	rF.		
TELETIO ON LOGI TIME EN	COURTENED.				 	7
EQUIPMENT (working, deliv						
CVE fab crew: Portable toilet (2), for wash-clown structure, trachoe (3), lo				crew truck, bo	oom truck. Newn	nan: portable
OSHA Recordable Safety In	cidente:		· ·	Reported	hv:	J Time:
Con A Recordable Salety In	oluciită.	· · · · · · · · · · · · · · · · · · ·	— - Т	reported	~ , .	7.7.10.
				<u> </u>		



Russ Johnson

PROJECT NAME:	Thi	rd West Sub - Rebuild	DATE: Tuesday, February 14, 20				
PO & Work Order NO. :	300	00078050 / 10035803	MAIN CONTRACTOR	: Cache Valle	ey Electric		
Crew Start Time:	7:00	Crew Stop Time:	15:25	Tot Hrs mns:	8:25		
FCR Start Time:	6:45	FCR Stop Time:		_Tot Hrs mns:	17:15		
Use military time format 00:00		•					
WEATHER CONDITIONS:		Cloudy, 34 degrees in a	AM - Partly Cloudy, 43 dec	rees in PM			
DESCRIPTION: (work perf	ormed, gen	neral comments, instructions to	contractor, # of crew me	embers onsite)		
of the west transformer. Newma	an readied the et for ms and	ed out the north end of the 46 kV vau e Decon and filled the water tank. CV placed rebar for same. CVE Electric syment but missed him. CVE Fa	VE Fab Crew laid out the spre	ead footings in the to the Decon. I	e excavation dropped by		
		•					
		•			·		
				v			
F WORKING IN ENERGIZE	D SUBSTA	ATION	· · · · · · · · · · · · · · · · · · ·				
Dispatcher login, name and time		Montanez 0645					
Dispatcher logout, name and tin				`			
DISCREPANCIES:	•		IMMEDIATE CORRECTI	VE ACTION TA	AKEN:		
			1				
			ļ. <u> </u>				
11/30 - Identified an additional retai Demo Plan.	ning wall that is	s below grade and does not show on the	Will excavate to detennine dime	nsions.			
12/15 - Excavated to locate the 46 l	V cables exitir	ng the west side of the yard. Dug 8' and	Sent e-mail to Roger F.				
	ual deoth will b	e much deeper than design of new bank					
DEEATO OK EGOT TIME E	TOO ON TEL			 -			
EQUIPMENT (working, del			· · · · · · · · · · · · · · · · · · ·				
		ster, office trailer, conex, exclusion zone of mini-ex, power washer, water truck, comp		oom truck. Newn	nan: portable		
OSHA Recordable Safety I	ncidents:		Reported	bv:	Time:		
Committee Condition Carrety I			T	<u>-1.</u>			
·							



Russ Johnson

PROJECT NAME:	Third West Sub - Rebuild			Wednesd	lay, Februa r y	15, 2012
PO & Work Order NO. :	3000078050 /	10035803	MAIN CONT	RACTOR:	Cache Valle	y Electric
Crew Start Time:	7:00	Crew Stop Time:	17:10)	Tot Hrs mns:	10:10
FCR Start Time:	6:35	FCR Stop Time:	17:30)	Tot Hrs mns:	10:55
Use military time format 00:00					-	
,		•		•		
WEATHER CONDITIONS:	Ov	ercast, 35 degrees in	AM - Partly Clou	udy, 45 deg	grees in PM	· · · · · · · · · · · · · · · · · · ·
DESCRIPTION: (work performe	ed, general comm	en t s, instructions to	contractor, # c	f crew mei	mbers onsite.)
R&R set up four monitors. Newman						
outside insulation was damaged during Electrical crew worked with Newman the west transformer (approx. 115 cylests, and cylinders, on four of the 17 Fab Crew = 7, CVE Electrical Crew =	on cable repairs and ds) and the spread for trucks. RMP crews	ran wiring in the control poting mats, "E" foundati came on site and remov	building. CVE Fa ons (approx. 57 c red the batteries fr	ab Crew pour yds). W ilding	red 172 cyds of g conducted air	concrete for
IF WORKING IN ENERGIZED SI						
Dispatcher login, name and time:	Gus Montanez 063				•	
Dispatcher logout, name and time:	Gus Montanez 172		IMMEDIATE CO	OBBECTIV	E ACTION TA	VEN.
DISCREPANCIES:	<u>.</u>		IMMEDIATE CO	OKKEC IIV	E ACTION TA	NEN:
		- <u> </u>				
11/30 - Identified an additional retaining w Demo Plan.	rall that is below grade a	and does not show on the	Will excavate to def	termine dimen	sions.	
				<u> </u>		
12/15 - Excavated to locate the 46 kV cab	oth will be much deepe		Sent e-mail to Roge	er F.		
DELAYS OR LOST TIME ENCO	UNTERED:					
			-			
EQUIPMENT (working, delivered					-	
CVE fab crew: Portable toilet (2), forklift, wash-down stmcture, trachoe (3), loader				, crew tmck, bo	oom trnck. Newm	an: portable
				•		
OSHA Recordable Safety Incid	ents:			Reported	by:	Time:
				· ·		-
					İ	
						



Russ Johnson

Field Construction Representative

PROJECT NAME:	Third West Sub - Rebuild			DATE: Thursday, February 1			
PO & Work Order NO. :	300007805	0 / 10035803	MAIN CONTRACTOR : Cache Val			Electric	
Crew Start Time: FCR Start Time:	7:00 6:38	Crew Stop Time: FCR Stop Time:	17:10 17:30		rs mns: rs mns:	10:10 10:52	
Use military time format 00:00 WEATHER CONDITIONS:	÷	Partly Cloudy, 31 de	earees in AM - 4	45 dearees in PM	ı		
DESCRIPTION: (work perfor							
removing backfill. CVE Electrical of supports, leaving the wall forms for started placing rebar on the stems. Service showed up today to take a to recommend that Hundai send a CVE Fab Crew = 7, CVE Electrical CVE Fab Crew = 7.	r the transformer ar for the spread footi look at the site for representative for t	nd covered with insulation bla ings. RMP Communication T the purpose of unloading the the trucking company to evalu	inkets. They remed to the transformers. What transformers. What the alternative the alternativ	oved forms for the a e new control building agstaff took some	spied foote ing. Wags pictures ar	er mats and staff Crane nd is going	
IF WORKING IN ENERGIZED		· · · · · · · · · · · · · · · · · · ·					
Dispatcher login, name and time: Dispatcher logout, name and time:	Gus Montanez Barry Neiison			<u>-</u> -			
DISCREPANCIES:	party Neison		IMMEDIATE C	ORRECTIVE AC	TION TA	KEN:	
				_			
11/30 - Identified an additional retainin Demo Plan.	g wall that is below gr	rade and does not show on the	Will excavate to de	termine dimensions.			
12/15 - Excavated to locate the 46 kV didn't find them. Will try again. Actual DELAYS OR LOST TIME ENC	depth will be much de		Sent e-mail to Rog	er F.			
EQUIPMENT (working, delive CVE fab crew: Portable toilet (2), forkitrachoe (3), loader, bobcat, mini-ex (2)	ered, idle): lift, 1 dumpster, office		onex, (2), tool traile	er, crew trnck (2), boor	m tmck. Ne	ewman:	
OSHA Recordable Safety Inc	idents:		-	Reported by:		ime:	
							



Russ Johnson

PROJECT NAME:	Third We	est Sub - Rebuild	DATE:	Friday, Febru	ary 17, 2	2012		
PO & Work Order NO. :	3000078	3050 / 10035803	MAIN CONTRACTOR : Cache Valle			lley Electric		
Crew Start Time:	7:00	Crew Stop Time:	17:10	Tot Hrs	mns:	10:10		
FCR Start Time:	6:45	FCR Stop Time:	17:30	Tot Hrs	mns:	10:45		
Use military time format 00:00		•		 :	_			
``\ .								
WEATHER CONDITIONS:		Partly Cloudy, 28 deg	rees in AM - 45	degrees in the PM	<u> </u>			
DESCRIPTION: (work perfe								
R&R set up four monitors. Nevn and north sides of the west trans and tools, and reviewed drawing CVE Fab Crew = 6, CVE Electri	man continued exc sfonner. CVE Elegs. CVE Fab Crew	cavating for the #4 and #5 12 kV ctrical crew wired panels. CVE completed tying rebar for the sp	vaults and set bo ine Crew mobilization for the contract of th	th. Newman backfill ed to the site, rounders and made up fonn	ed along ed up eq	ui pme nt		
				•				
•								
						-		
IF WORKING IN ENERGIZE	D SUBSTATION	l:		 .				
Dispatcher login, name and time	: Ken Barto 0	0645						
Dispatcher logout, name and tim	ne: Jim Bowma							
DISCREPANCIES:			IMMEDIATE CO	DRRECTIVE ACTI	ON TAP	(EN:		
	<u> </u>			· · · · · · · · · · · · · · · · · · ·	,			
11/30 - Identified an additional retain	ning wall that is helow	warade and does not show on the	Mill excavate to det	emine dimensions				
Demo Plan.	iiig wali tilat is below	y grade and does not show on the	vviii excavate to det	emmensions.				
12/15 - Excavated to locate the 46 k	V cables exiting the	west side of the yard. Dug 8' and	Sent e-mail to Roge	er F.				
didn't find them. Will try again. Actu	ual deoth will be muc							
DELAYS OR LOST TIME EN	COUNTERED:							
EQUIPMENT (working, deli	Vered, idle):							
CVE fab crew: Portable toilet (2), for		fice trailer, conex , exclusion zone co	nex, (2), tool traile	r, crew truck (2), boom	truck. Ne	wman:		
trachoe (3), loader, bobcat, mini-ex	(2), water truck, com-	pactor, backhoe.						
								
OSHA Recordable Safety I	ncidents:			Reported by:	 T	ime:		
					\longrightarrow			
i	•				- 1			



Russ Johnson



February 15, 2012

Laboratory Code:

RES

Subcontract Number: Laboratory Report: NA

Project # / P.O. #
Project Description:

RES 229700-1 None Given None Given

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 229700-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0016

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 229700-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

None Given February 14, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

February 15, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID N	ID Number Analyzed		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-021312 S	EM	863931	0.0800	986	ND	0.0049	BAS	BAS	
3W-021312 W	EM	863932	0.0800	974	ND	0.0049	BAS	BAS	
3W-021312 N	EM	863933	0.0800	970	ND	0.0050	, BAS	BAS	
3W-021312 E	EM	863934	0.0800	970	NO	0.0050	BAS	BAS	

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

Time 790 5274 6095

Date

Initials

Due Date: 2 '15'12 Due Time:___

Contact

Reservoirs Environmental, inc.

	9861 Logen St. Canver Pager : 303-4	509-209	98			1300 • F	ax su:	3-4//-	42/5	- 161	i Fraa :	1 2003	KESI-				-	-05		- 14					
Company: 1/ 5/1 C.	INVOICE TO: (ור או	FER	ENI)		TC.	intact:	~			- 7	77	-		CONI	AU	IN	FOR ICam		TION:					
- K Lhymon mental	Address:	· ·							Prone: Orive Roselley							Phone:									
41W 40403, 4-C							Fax									Fax									
Surty Ul. 84070							il/page	nr (-	-	77		7/-					Call/							
Project Number and/or P.O. #:	<u> </u>								<u>921</u>	27C	il Aintr	<u></u>	<u>جد</u>					Cas						.	
Project Oescrip8on/Localicn:	,,,,					'"							_												
rigot costification.			· .			—└		χι	<u> </u>	<u> </u>	10	gnr	0.0	(O~	<u> </u>										
ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm	Austrian (a la leta algebrie a			1		REQU	EST	ΓED	AN	ALY	SIS	. · · ·		1.5	4. 4.		VAL	JD N	ITAN	RIX C	ODES	186	U	AB NO	TES:
PLM / PCM (TEM / RUSH (Same Day) Y PRIORITY (Next D	ay)STANDARD			T				П	T	T		П	Т		Т	_	\ir=	Ā	\neg	- 8	ulk = B				
(Rush PCM = 2hr, TEM = 8ltr.)			1	- [1	1		1 1	- {	1 1	-		-	ì		D	ust =	= D		P	Paint = P				
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm	되면 [[]는 회속, [급급]	- T		1			ľ			11						s	oil =	S		W	/ipe = W	,			
Metal(s) / Dust RUSH 24 hr 3-5 Day		٦	۳ ا					1	1	1 1	1		┨.	.		Sw	ab =	SW	\neg	F	= Food				
RCRA 8 / Metals & Weldins RUSH 5 day 10 day	"Prior notification is required for RUSH	٦	ğ	į	11	5		11	1	ş	<u> </u>		5	:	Dri	nking	Wat	ter =	DW	W Waste Water = WW		ww			
Funie Scan / TCLP — ROSH — 5 day — 10 day	tumarouivda.**	13		. [Scan	ļ			3			1§	Si					0 = 0	ther					
Organtcs 24 hr 3 day5 Day		Point Count	١.۵			Metais			1	Quantification	ا ج		Quantification	OTHER NOTES	-	AST	M E1	792 a	2 approved wipe media only**						
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6	pm		S 5					Н			Quantification or Quantification	Quantification	۾ اڇ	8							T				
E.coli Q157:H7, Collforms, S.aureus 24 hr2 Day		Long report.	7402, SO-India	≰		E E				8	Quantification or Quantifica	ig :	Cuandication Q	Ē	1]]	Į]				
Salmoneila, Listeria, E.coll, APC, Y & M 48 Hr3-6 D	ay	\$	1 × 8	OSHA	9			H	İ	7	≨ ₹	Jen .		ORC							1	1			
Mold RUSH24 Hr	48 Hr S Day S Day	ڐٳ	Level II, 0-vec. 19		<u>\$</u>	2 ₹)):	÷	崮山	٦	ا ا		S	1			ll	i		1	1			
**Turnaround times establish a laborately priority, subject to laboratory volume and	are not guaranteed. Additional fed	م ا		Į	Respirable	18 8	픊	🛊	ş]	8	8 \$	٧.	ક ૐ	Ž							İ	- 1			
apply for aftertroofs, weakends and trolldays.		ort report.	્રે કે	≰	-	ءَ ۽	₹	<u>.</u>	÷ 5	[월]		7	نے ای	· <u>\$</u>	<u>§</u>			اي ا			i	ı		1 1 1 1	Trage.
Special Instructions:		1 20	1 - AHERA,	- 7400A, 7400B,		METALS - Analyte(s) RCRA 8, TCLP, Welding Fume,	ORGANICS - METH	Salmonella:	Listeria: +/-	Aerobic Plate Count	(= 1	S.aureus	Mold.	IPLER'S	Sample Volume	(L) / Area	Matrix Code	# Containers		ate	Tim	ne		imber (Usa Ont	
Client sample ID number (Sample ID's must be uniq	ue)	₹	Se TEM	Ş	DUST	₩ £	Š		M		310L0			3	J	€	Mai	#		lected vadyy	Collec		1,1	4.55	
1 3W-02/3125			X						I						98	6	A		211	3/12			86	39	3(
2 3W-021312 W														1.3.	97						1 11				3 Z
3 3W-021312 N		L					_								97	_									33
4 3W-021312 E			v					Ц							97	0	V		<u>:</u>						34
5		上								Ш					\perp										
6		1 1/1																					13. 1	.:	:
7					L								L		L										
8										Ш									•	11.	.1:				1 2
9	····				\square						\perp				$oldsymbol{\perp}$	_									
10							Li					1	'	1.		. :			. :						
Number of samples received: (Addi NOTE: REI will analyze incoming samples basell uport information raceived and will not b Snafysts as indicated on finis Chain of Custody shall constitute and analytical services agree		calcula	tlene res	sulting	from t	ha inacc										tativa	agre	es thai	t subm	ission of	the follow	ing sam	ples for re	equested	
Relinquished By: Wat Kee gur	Fed Fx	٠ اد	1,1		τ	ne: 2	_		<u>Z_</u>		<u></u>							-	ition:		On Ice 'es / No	-	aled s / No	Inter Yes	
Results: Contact Phone Email Fax Date	ato Time;	itiels		ontac		Carrie			$\overline{}$	ma	_	_	_		Date			_		Tim	e		Initia	als	

Contact

Initials

Phone Email Fax

Phone Email Fax

Time

Attachment I

Key to Count Sheets **Count Sheets Analytical Procedures**

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type Structure Types F = FiberA = AmositeAn = AnthophylliteB = Bundle≐ Chrysotile C = ClusterCr = Crocidolite

T = Tremolite

ND = no structures detected

= other structure associated with a matrix

M = Matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

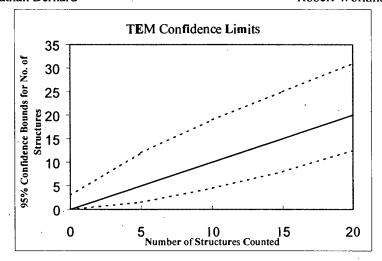
Sizing Conversion 1 length unit = 5 mm on screen = 0.278 micron 1.80 length units = 0.5 micron 18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard

Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX/N S
Vollage (KV)	100 KV
Magnification	(20K) 10KX
Grfd opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	AN HE KARAMAN PANE HERMAN
QA Type	手續那個主義医療

Clien(:	Park
Sample Type (A=Air, D=Dus():	作。什么
Air volume (L) or dust area (cni2)	980
Date received by lab	2 4/12
Lab Job Numben	24700
Lab Sample Number:	203931

F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary tilter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid storage location	Month Analyzed
Counting rules (ISO, AHERA, ASTM)	AH
Metiliod (D=Direct, 1=Indirect, IA=Indirect, ashed)	7
Analysis data	2(5/2
Ana(vzed by	573

Grid	Grid Opening	Structure	No. of Structures			nsions	Identification	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-6	ND												
	64-6	MD					4	·						
	F4-6	WD.			K	W 5	A S	The un ha	n F	5-	7% debr	<u> </u>		
	E4-6	ND			10	0	36	9/6 inta	4	_5-	7% debr	5		
B	H5-4	W				1		16		/				
	65-4	ND			·			45	2/15/	12	•		·	
	615-3	M		•				//	/ /		·			
	F5-3	NO												
									,					

Page	1	of	

Laboratory name:	REI
Instrument	JEOL-100 CX/N/S
Voltage (KV)	100 KV
Magnification	(20K) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um 14.7
Scale: 1D =	**************************************
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	型
QA Tvoe	(学科)

Client :	
Sample Type (A=Alr, D=Dust):	制件建
Air volume (L) or dust area (cm2)	清 伊山灣
Date received by lab	La la sas
Lab Job Number:	100
Lab Sample Number:	V. 3422

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary litter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Analyzed by	關語
Analysis date	3/3/2
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	
Counting miles (ISO, AHERA, ASTM)	等44第二
Grid storage location	Mbrith Analyzed
Scope Alignment	Data Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class	Mineral Class			1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM_	Sketch/Comments	Sketch	Photo	EDS
A	H3-)	ND												
	G3-1.	2			P.	Sp A	80	he in he	n f	\$ -	74 16	vS		
	F3-1	ND			R	06	5 90	Lon fu	rf	5-3	Top deby			
	E3-1	ND												
B	F4-4	ND						2/1	2/1	5/12	·			
	E4-4	M							. / .	//				
	C4-4	M						,						
	B44	ND												

age	1	of		

Laboratory name:	TO REI
Instrument	VEOL 100 CX/N/S
Voltage (KV)	100 KV
Magnifleation	20K) 10KX
Grid opening area (mm2)	多元 0.011 第一章
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	1385 W
Secondary Filter Area (mm2)	一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一
QA Tyce	

Client :	TO PLANE
Sample Type (A=Air, O≂Duat):	排網/法額
Air volume (L) or dust area (cm2)	增持的其
Date received by lab	
Lab Job Number:	TO THE REAL PROPERTY.
Lab Sample Numben	505489

F-Factor Calculation (Indirect Preps Only):				
Fraction of primary filter used				
Total Resuspension Volume (mi)				
Volume Applied to secondary filter (ml)				

Analyzed by	军验者 亚
Analysis date	場民
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	以 海中 4000
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class	B		_	1 = yes, blank = no		= no
		Туре	Primary	Total	Length	Width		Amphibole		NAM	Sketch/Comments	Sketch	Photo	EDS
A	E4-4	VD.												
	64-4	ND			P	ΔΔ	A 7	o Lanh	n F	10	-15% abk	ers		
	K2-3	ND			R	101	3 80	D'olivation	<i>f</i>	10-	15 % deb	خرار		
	H2-3	A/D				- r ·		16		, .			-	
B	154-6	NO						18	2/15	/12	·			
	H4-6	SIN						//	/ /	/ setu				
	64-6	VID		,		,		/						·
	F4-6	NO												
									, ,					
										·				

Laboratory name:	REI
Instrument	JEOL 100 CX/N/S
Voltage (KV)	100 KV
Magnification	/2010 - 1010X
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	40.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	对自然的特殊的
QA Туре	建筑建筑建筑

Client :	
Sample Type (A=Aír, D≖Dusf):	提出化學程
Air volume (L) or dust area (cm2)	4704
Date received by lab	
Lab Job Number:	1224 BD
Lab Sample Number:	TENTE STEE

Scope Alignment	Date Analyzed
Grid storage location	Morith Analyzed
Counting rules (ISO, AHERA, ASTM)	源如果证明
Method (D=Dtrect, l=Indirect, IA=Indirect, ashed)	TE LOW TO
Analysis date	3/3/2
Analyzed by	Park H

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary fliter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure Type	No. of St	mctures	res Dimensions Identification Mineral Ci		Mineral Class				1 = yes, blank = no		≠ no	
		Type	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
Α	610-3	ND		<u>.</u>										
<u></u>	F6-3	ND			Pm	A	80 /s.	a fort.	5%	de	ans			
	E6-3	ND.			Par	bB	80%	in but	50	n de	bus			
•	E5-3	NP			, (
3	84-3	ND			·			B 2/1	5/12					
	H4-3	ND						/ /	/			<u> </u>	·	
••-	64-3	MO					/						,	
	F4-3	MD												
								·	,					

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



February 16, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 229783-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 229783-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 229783-1

Client: -

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

February 15, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

February 16, 2012

Client	Lab		Агеа	Air	Number of	Analytical	Astestos	Filter	
ID Number	ID Number		Analyzed Volume Sampled		Asbestos Structures Detected	Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-021412 SW	EM	864371	0.1000	815	ND	0.0047	BAS	BAS	
3W-021412 NW	EM	864372	0.1000	81 9	ND	0.0047	BAS	BAS	
3W-021412 NE	EM	864373	0.1000	815	ND	0.0047	BAS	BAS	
3W-021412 SE	EM	864374	0.1000	813	ND '	0.0047	BAS	BAS	

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 2/16/12 Due Time: 8130 0

Reserveirs Environmental, inc. 5801 Logan St. Denver, CO 90216 • Ph. 303 964-1986 • Fas 303-477-4273 • Toli Free : B68 RE8I-ENV

Pagar : 303-508-2096

Page	1	of	1

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Project Number and/or P.O. #:												Fin	•																
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Organics	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		3 day					Point Count	88 P. P.	1 1)	Metals			1 1,	Quantification	5	5	E E	2	"AST	M E1	792 ap	proved wip	90 me	edia only**			
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	mples received:		<u>ar ya Barata ya Karata ya Karata</u> K	(Additi	ional sample	es shall be	listed on	attac	ched ic	ona fo	rm.)	لفنته	لنا	<u> 1</u>		نا د	11	717.	طنحك	<u></u>	·	نستا	L	<u></u>	يانيت	<u> </u>	<u></u>		
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Laborator Received By:	y Use Only	QQ		D	ate/Time:	2/15/1	7	8:3	<u>ි</u>	`.		Carrie	يا.	لمه	۶	SC)					Тө	mp. (F°) _		Yes	No Y	88 / NO	(A)	40
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	7000	227	757	7																									

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Structure Types

Asbestos Type A = A mosite

A = Amosite F = Fiber

An = Anthophyllite B = Bundle

C = Chrysotile C = Cluster

Cr = Crocidolite M = Matrix

 Γ = Tremolite

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

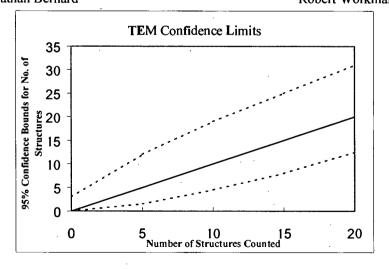
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Maanification	(20KX)10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	新聞的

Client :	Rake
Sample Type fA=Air, D=Duat):	排稿
Air volume (L) or dust area (cm2)	95
Date received by lab	2/5/2
Lab Job Nurriber:	224483
Lab Sample Numben	60.43#T

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	33
Analysis date	2/10/12
Method (D=Direct, I=Indirect, IA=Indirect, asfied)	
Counting rules (ISO, AHERA, ASTM)	HI ARRE
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening St		No. of St	ructures	Dimer	твіопв	Identification	Mineral Class			·	1 = y	es, blank	= no
	,	Structure Type	Primary	Total	Length	Width		Amphibole	C NAM		Sketch/Comments	Sketch	Photo	EDS
A	K4-)	ND						·						
	H4-1	ND			Pa	DA	80	Lo in Long	- 3-	5%	debris			_
	64-1	M			Ph	00	70	min front	3-	كريس	Colons			
	E3-6	ND				1								
	C3-10	2					/	B 2/16/12						
B	F3-3	W					77							
	E3-3	WD					/	·						
	C3-3	ND												
	13-3	ND												
	E3-4	M						·						

Laboratory name:	REI
Instmment	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	5 0.01 C 4.5
Scale: 1L =	0.28 um
Scale: 1D =	0.058 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	注题制造派制度

Client :	地 Q3/2
Sample Type (A=Alr, D=Dust):	HE ASSE
Air volume (L) or dust area (cm2)	
Date received by lab	规划建筑
Lab Job Nurhber:	1124-114873
Lab Sample Number	李64度

Analyzed by	」「おうちょう」
Analysis date	2/16/12
Method (D=Direct, l=Indirect,	THE PART AND THE
IA=Indirect, ashed)	上 。
Counting rules	一种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种
(ISO, AHERA, ASTM)	国际制度
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filler used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = yes, blank = no			
		Type	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	H3-6	ND													
	63-6	w				Pina	A	80/ m	ha	<u> </u>	3-5% de	bus			
	F3-6	ND				Pm	B	60 /0 c	Gus	4	% do	bus			
	E3-10	ND				. (**		. 6							
	C3-10	ND						B 2/16	1/12						
3	H3-3	ND						/ / /		2 d 1 d 1	•				
	63-3	ND					. /						·		
	F3-3	ND													
	H3-1	M													
	631	ND													

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX)10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	20.058 um
Primary filter area (mm2)	为自己的自己的自己的自己的自己的自己的自己的自己的自己的自己的自己的自己的自己的自
Secondary Filter Area (mm2)	機能與網絡網絡
QA Type	全球排泄性排泄器

Client :	11/28/2
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	19835111
Date received by lab	2015
Lab Job Nurnber:	221123
Lab Sample Number:	

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (nil)	1
Volume Applied to secondary filter (ml)	

Analyzed by	I I Joseph
Analysis date	2/10/12
Method (D=Direci, l=indirect, IA≖indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	
Grid storage location	Monfli Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening Structure		No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
		Type	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K3-4	ND												
	H3-4	NO			(mo	A	80 hoin	m.	4	3-5% del	713		
	1913-4	ΝD			6		3	70 hens	my	(-	5/6 deb.	<u>ئ</u>		
	F3-4	M							ih					
	F2-1	NO							B	2/16	1/2			
<u></u>	634	ND							/	1 / 1				
	F3-4	ND						. /						
	F3-1	ND					· 		<u>.</u>					
	H2-3	NO												
	6123	M												

Pag	je '	1 0	f	

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	2010() 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	10.28 um
Scale: 1D =	100.056 um
Primary filter area (mm2)	13111111111111111111111111111111111111
Secondary Filter Area (mm2)	建设设施设施设施
QA Type	

100000
静即 解系列的
ING BANK
沙肉酒中等
11211123

Lab Campio Hambor.	Cathorizan Charles Acade 11 etc.
F-Factor Calculation (Indirect P	reps Only):
Fraction of primary filtar used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	38
Analysis date	2/2/2
Method (D=D!rect, !=Indirect, IA=Indirect, ashed)	第 十万 亿等。
Counting rules (ISO, AHERA, ASTM)	设施的工作
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	rid Grid Opening Structure No. of Str		ructures	s Dimensions		Identification	Mineral Class			1 = y	es, blank	= no		
		Туре	Primaly	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-4	ND												
	K4-1	M			1	w 2	4 60	Lo in hut		3-5	6 de his	S		
	14-4	M			P	ا م	3 90	be in hut		3-5	of delari	5		
	H4-1	M				970	70		ih					
	64-1	M						4	B	2/10/1	/ R			
3	164-3	ND			·	<u> </u>				<i>/ /</i> .				
	H4-3	M					<u> </u>	·						
	1943	MD												
	F4-3	ND												
	E4-3	MD												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# \text{ Asbestos structures}}{\text{Area Analyzed (mm}^2)}$

GO = TEM grid opening



February 17, 2012

Laboratory Code: Subcontract Number:

res Na

Laboratory Report: Project # / P.O. #

RES 229871-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Ine. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 229871-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 229871-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP February 16, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

February 17, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Number		Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading	
•		(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)		
3W-021512 SW	EM	86497 2	0.0900	916	ND	0.0047	BAS	BAS	
3W-021512 NW	EM	864973	0.0900	909	ND	0.0047	BAS	BAS	
3W-021S12 NE	EM	864974	0.0900	909	ND	0.0047	BAS	BAS	
3W-021512 SE	· EM	864975	0.0900	907	ND	0.0047	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

DATA QA

Due Date: 2-(7-12 Due Time:

RESERVOITS Environmental. Inc. 6801 Logan 8t. Danver, CO 80218 • Pr 303 864-1888 • Fax 303-477-4275 • Toll Free :886 RESI-ENV Pages - 303-806-2088

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Sandy, Ut. 84076						F	EX:					-			Fi	DC:				
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Project Number end/or P.O. #:							-	te Delive				_								<u>-</u> -
Project Description/Location: 300 (West Sub-RAND							<u>C</u> lea	ve	<u> </u>	α	ni.	<u>0.0</u>	m							
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PLM / PCM /(TEM) RUSH (Same Day) 🗶 PRIORITY	(Next Day)STAI	NDARD	Π				T	П		П		T			Air = A		В	ulk = B		
(Rush PCM = 2hr, TEM						1					1.1		1.	D	ust = [)	Pa	aint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: Sam	5pm		1 1												Soll = S			pe = W	 	
Metal(s) / Dust RUSH 24 tir 3		notification la		Quant,				11		_]	[аь = S			= Food		
RCRA 8 / Metals & Welding RUSH 5 day16	day requir	ed for RUSH	1	9 %		1		11		- <u>Ş</u>	11	} }	g v	Drinking	Water			Water = WW	 	
Organics 24 hr 3 day 5		erounds.**	Point Count	, +/-, Preps		Metals Sran				Quantification		Ιi	FIB	**AST	M E179		Other	media only**	 	
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9		A.S. (1.5727 F.C.)		S S				1	1	ð ू	[S	5 -		1		T T		Thousa oray	 	
E.coll O157:H7, Coliforms, S.aureus 24 hr			report,	52, Fig.	\$	8				히죓	튙뱛	1 48	- E		11	1			-	· · · · · · · · · · · · · · · · · · ·
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Number of samples racelvad:		es shall be listed on								$\overline{}$	_									
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite T = Tremolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected ·

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

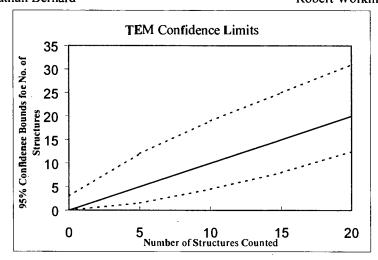
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20K) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 im
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	KA
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	90
Date recaived by lab	型间压器
Lab Job Number:	2284
Lab Sampia Number:	861772

Grid storage location	
	Month Analyzed
Counting rules (ISO, AHERA, ASTM)	A4
IA=Indirect, ashed)	
Method (D=Direct, I=IndIrect,	CALL DES ALL THE
Analysis date	21712
Analyzed by	

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filler used	}
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (mi)	

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	613-6	ND			1									L
	F36	20				·				L				
	633	CN			Pa	D 9	+ v	50/2 in 6	mot		5/ Jeh	6.5		
	44-1	M			Pu	2/1)	750/n	Kust		To delan	5		
,	H5-6	MD							1					
B	195-6	10						1) el	7/12				
	F5-6	√Ô								'/				
	£5-6	1D						7 .			·			
	C5-10	M				·								

Laboratory name:	REI
instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20K) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.0S6 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	KAL
Sample Type (A=Air, D=Dust):	和其实
Air volume (L) or dust area (cm2)	1916
Date received by lab	認問問題
Lab Job Number:	22987
Lab Sample Number:	804-2

Analyzed by	76
Analysis date	217/2
Method (D=Direct, I=IndIrect, IA=IndIrect, IA=IndIrect, ashed)	
Counting rules (ISO, AHERA, ASTM)	44
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Gri	d Grld Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class	3			1 = y	1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	613-6	ND			1				i			· · · · · · · · · · · · · · · · · · ·			
	F36	M													
	633	CIN			Pu	D 9	+ v	50% int	m		5/2 Jeh	ري		.	
	64-1	M			Pu	0/1	<u> </u>	750/0 in	Furt		To dely	5		L	
	H5-6	M							4	Ì		<u> </u>			
	6 195-6	in					'	1) el	7/12					
	F5-6	νĎ							/	'/'					
	£5-6	ID						/ .							
	C5-6	M													
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Laboratory name:	THE REL
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	/20KX 10KX
Grid opening area (mm2)	10001 A
Scale: 1L =	0.28 lim
Scale: 1D =	0.056 um
Primary filter area (mm2)	1385
Secondary Filter Area (mm2)	4時間對於明報
QA Type	

Client:	HEALTH
Sample Typo (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	
Date received by lab	建筑形
Lab Job Number:	William Control
Lab Sample Numben	ROMATS

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	78
Analysis date	21772
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	THE PARTY
Grid storage location	Morith Analyzed
Scope Alignment	Date Analyzed

	Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	≃ no
.]			Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
	A	154-4	ND												
		H4-4	10			LP	m_/	60	Los m.	4	5/	6 Jebus			
		K4-6	ND			P	امه	3 70	% inh	<u> </u>	50	6 debus			
		154-3	W												
		H4-6	MD						18	2/17/	2				
	B	84-4	ND							/ . /					
		H4-4	MD				<u> </u>		/						
		64-4	M												
Ì		64-6	ND												

Laboratory name:	THE REL
Instrument	JEOL 100 CX N/S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	15 10 10 10 10 10 10 10 10 10 10 10 10 10
Scale: 1L =	0.28 um
Scale: 1D =	注意 40.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	TKW TH
Sampio Type (A=Air, D=Dust):	神學性為建
Air volume (L) or dust area (cm2)	3000
Date received by lab	经制度
Lab Job Number:	1120841
Lab Sample Number:	3643

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	(# 518 °)
Analysis date	2 7
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	·····································
Counting rules (ISO, AHERA, ASTM)	海角
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	No. of Structures Di		Dimensions Identification		Mineral Class				1 = y	es, blank	= <u>n</u> o
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-1	ND			,	_					·			
	1+4-1	ND				Inx	A	90 h w	lus f	Ś	La de bris			
	614-1	W				Band Band	3	70 %	hut	- <u>-</u>	La delas			
	F4-1	MD												
	E5-4	MD						13	2/19	1/2				
<u>B</u>	Hb-4	ND							1.1					
	46-4	NO						/						
	F6-4	M												
	E6-4	M									,			
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Laboratory name:	是一种的一种。 是一种的一种,
Instrument	UEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20K) 10KX
Grid opening area (mm2)	0.011
Scale: IL =	20.28 um
Scale: 1D =	0.056 im
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	计算机设置数据
QA Type	

Client :	WAR
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	間的神影
Date received by lab	多問題
Lab Job Number:	1117484
Lab Sample Number:	804775

F-Factor Calculation (indirect Pr	eps Oniy):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	78
Analysis date	之许是
Method (D=Direct, l=Indirect, IA≖Indirect, ashed)	型专工
Counting rules (ISO, AHERA, ASTM)	AH A
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
Olic	Ond Opening	Туре	Primary	Total	Length	Width	idoni-ilodi-on	Amphibole	С	NAM	Sketch/Commenfs	Sketch	Photo	EDS
A	1+4-4	NO												
	(54-4	ND											,	
	F4-4	ND			F	D 421	LAB	~ 80%	inh	nf	5 hodel	N5		
	E4-4	ND				,								
	64-4	NO										<u> </u>		
B	H4-3	MD												
	6143	MD												
	F4-3	NO				<u> </u>						<u> </u>		
	E4-3	ND												

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



February 20, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 229965-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 229965-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-4; TDH: #30-0015

TABLE 1. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 229965-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

February 17, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

February 17, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID N	umber	Anályzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
		•	(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-021612 SW	EM	865601	0.0900	943	ND	0.0045	BAS	BAS
3W-021612 NW	EM	865602	0.0900	945	ND	0.0045	BAS	BAS
3W-021612 NE	EM	865603	0.0900	943	ND	0.0045	BAS	BAS
3W-021612 SE	EM	865604	0.0900	934	ND	0.0046	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 2/8/2 Due Time:

REICAB RESERVOITS ENVIRONMENTAI, INC. 880 | Logan St. Denvor, CO 80216 • Ph; 303 994 • 1980 • Fee 303-477-4275 • Toff Free :880 RESI-ENY

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company. Red Environmental	Company.						Cor	tact: (Dave	R	osk	ello	/					Conta						
udress: 47 W 90005 #2	Addresa:						Pho	rw:				_						Phon	0:					
Sandy W. 84070							Fax											Fax:						
							Cel	/pager.	801	54	(1-	03	5_					Celt/p	eger:					
Project Number and/or P.O. #: Project Description/Location: 3 to West Sub - RMP									Deliver					. . .										
roject Description/Location: 3 th West Sub-RMP		<u> </u>						Cau	M	<u> </u>	ME.	MI	<u>ن رن</u>	OD M	<u>~</u>									
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm				3.7°°		y	REQU	EST	ED A	NAL	YSI	S			Ala siy		VAI	ID N	MATR	IX CO	DES	LA	B NOTE	S:
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Fume Scan / TCLP RUSH 5 day10 day		for RUSH ounds.**	Count		8	Ì	Sea	1 1		Orantification	3	1	1	antification	3	Denia	9		O = Oti		10101 - 1111	 		
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Salmonella, Listeria, E.coll, AIPC, Y & M 48 Hr. 3-5 D	-		. ∫ §	, l		Respirable	E E	{ }			1		Tage 1	\$ 2	Š	1	1	1			i			
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analysis as indicated on fills Chair of Custody snaff constitute an analytical services agree	ement with paymer	nt larins of NET	30 daya, fa	iture ic	comply	with p	payment t	erms n	ay rest	ult in a	1.5%	month	ly inte	ereat s	urctang	· · · · · · ·								
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February 21, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 230091-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 230091-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 121896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 230091-1

CHent:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP February 20, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

February 21, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID N	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-021712 SW	EM	866599	0.1000	691	ND	0.0056	BAS	BAS
3W-021712 NW	EM	866600	0.1000	. 698	ND	0.0055	BAS	BAS
3W-021712 NE	EM	866601	0.1000	687	ND	0.0056	BAS	BAS
3W-021712 SE	EM	866602	0.1000	696	ND	0.0055	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

Due Date: Due Time:

FEILAB FIESBYOFS Environmental, Inc. 5801 Logan SL Cenvo; CO 80218 • Pic 303 964-1988 • Fax 303-477-4218 • Toll Free :866 RESI-ENV

Page _ 1__ of _ /

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	L. M. 84020				Fax	Fax									Fmc						
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Project Number	ond/or P.O. #:	/							a Deliva	arabte	Email A	Addro	18:								
Project Description	ion/Location: 3th West Sib-RMP							<u>dei</u>	re Ce	<u>) (</u>	re.	niń	10	com							
ASBESTO	S LABORATORY HOURS: Weekdays: 7am - 7pm		Ι			F	REQU	EST	ED A	NA	LYSI	IS_				VA	LID !	MATRIX (CODES	LA	B NOTES:
PLM / PCM	TEMRUSH (Same Day) PRIORITY (Next Day)STANDARD								П	T	П	T	Į.		Air :	A		Bulk = B		
	(Rusti PCM = 2hr, TEM = 6hr.)]				1 1							11.		Dust	= D		Paint = P		
	RY LABORATORY HOURS: Weekdays: Sam - Spm		1				·							1	L	Soll	= S_		Wipe = W		
Metal(s) / Di		**Prior notification is		설							_			í	s	wab:	= SW		F = Food		
	letals & Welding RUSH 5 day 10 day	rogulred for RUSH	탈	Quant			គ្				Quantification	П		8	Drinkl	ng W	ater =	DW Was	te Water = WM	4	
Fume Scan	/ ICLP	turnarounds.**	Point Count	Preps			Metals Scan					Н		TE 121			_	0 = Other		<u> </u>	
Organics	24 hr 3 day 5 Day	·	돌	SO.]		9		`	H	اچ	5	8	antific NOT	AS	TME	1792 2	pprovod wi	oo madia only**		
	DLOGY LABORATORY HOURS: Weekdays: 9am - Spr											Quantification									
	:H7, Coliforms, S.aureus 24 hr 2 Day	3-5 Day	Long report,	7402, 30-Ind	OSHA		Ę			Ш	ount +/- or Quantification	E I	r Quantificat Quantification	5 6							
	, Listeria, E.coli, APC, Y & M 48 Hr 3-5 Day		8	= ==	ő	ą.	قِ ا		 ÷		and the	ð	8 2	S S							
Mold		_48 Hr3 Day\$ Day	【문】	Level II, ro-vac, 18	8	.gc	Se Se				্টু∣ত		0	1012							···
"Tumaround	it times establish a laboratory priority, subject to laboratory volume and a apply for afterhours, weekends and helidays.**	ro not guaranteed. Additional foos	Short report,	RA, Level Micro-vac,	- 7400A, 7400B.	- Total, Respirable	- Analyte(s) TCLP, Welding Fume,	ORGANICS - METH	Salmonella: +/- E.coli 0157:H7:	+	Aerobic Plate Count E.coli: +/- or Qua	1 1	خ اخ	<u> </u>	Sample Volume	-	_				
Special Inst			풀	AHERA, uant, Mic	ĝ	Feb	~ 덛	8	ote Ote		erobic Pi	Coliforms:	S.aureus:	÷ S	Įğ,	8	ě		ļ		
			∞	¥ 8	~		15. 18.	3	£ 5	Usteria:	8 8	15	a s	S E	9 8	,	길	Date	Time		mber (Laboratory Use Only)
Client sar	mple ID number (Sample ID's must be unique	<u> </u>	돌	TEM	₽Ç¥	OUST	METALS RCRA 8,	8	ωIm		₹JШ ROBI			Mold:	E X	Matrix	# Containers	Collecte mm/dd/yy		1	
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analysis cs	s indicated on this Chain of Custody shall constitute an analytical services agreen	ent with payment terms of NET 30 day	s, fallu	re to co	nply w	ith pa	syment le	m ₁₆₋₈	18y resi	ult in a	a 1.5%	mont	hly inte	rest surcha	rge.						
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Laborato	ry Use Only	166			Date	y i in	ne: Z	<u>-11</u>	-11	<u></u>			>	_				dition:	On Ice	Sealed	Intact
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7-2011_version 1

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Structure Types F = Fiber B = Bundle C = Cluster

Cr = Crocidolite T = Tremolite

·ND = no structures detected

M = other structure associated with a matrix

M = Matrix

NAM = Non Asbestos Mineral

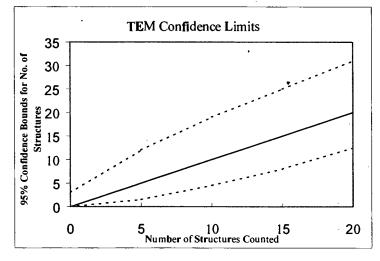
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

1 = 10000000000000000000000000000000000	
Client :	Rank
Samole Tvoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	691
Date received by lab	2/20/12
Lab Job Number	230011
Lab Sample Number	866519

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	2/21/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	, D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	Dimensions Identific		Identification Mineral Class				1 = yes, blank = no		
Gild	Glid Opening	Туре	Primary	Total	Length	Width	identineation	Amohiboie	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-1	ND												
,	(25-1)	W			P	ر م	4 4 B	~ 70%		m F	5-10%	bns		
	F5-1	ND												
	G5-3	ND							B 2	/21/1	2			
	F5-3	ND							/	,				
B	156-1	ND					<u>.</u>	, L			ļ.,i			
	H6-1	ND				<u> </u>								
	G6-1	ND												
	F6-1	ND												
	Els-	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	/20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	of girth party and
QA Tyoe	

Client:	Rak
Sample Type (A=Air, D=Dust):	The A. Charles
Air volume (L) or dust area (cfn2)	698
Date received by lab	2 20 (2
Lab Job Number:	230011
Lab Sample Number:	866600

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	J13
Analysis date	2/21/12
Method (D=Direct, I=Indirect,	
1A=Indirect, ashed)	
Counting rules	Á
(ISO, AHERA, ASTM)	
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	sions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments_	Sketch	Photo	EDS
A	154-4	MD .												,
	44-4	ND		1			Pan A	819%	unh	u f	10% deb	^ S		
	64-4	M					Ins C	60%	nh	nF	10% deb	<u>رح</u>		
	F4-4	NO					(
	<u>r</u> 4-4	ND						\mathcal{L}	B	2/2//	17			L
B	15-1	ND.								/ /				
	h5-1	ND												
	1+5-1	ND												
	G15-1	ND												
	F5-1	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	A Phillipping
QA Type	

Client:	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	687
Date received by lab	2 20 (2
Lab Job Number	230011
Lab Sample Number	866/201

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to sacondary filter (ml)	

Analyzed by	JB
Analysis date	22112
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	1
Counting atles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
	Cita Opening	Туре	Primary	Total	Length	Width	TO THE MENT OF THE PERSON OF T	Amphiboie	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	52-6	ND												
	H2-6	ND			-		A 8	Of auch	n L	5	-10% del	2/5		
	612-6	ND			1	nb	66	O Lo ca h	nt	5	-10% deh	1/1 5		
	F2-4	ND							15					
	EZ-4	ND							B	1/21/12	·			
6	H7-1	ND							/	//				
	62-1	ND						7						
	FZ-1	UD												
	EZ-1	ND												
	CZ-1	.20												

Laboratory name:	REi
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	120KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	ALEGE PROPERTY.
QA Type	

Client :	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	696
Date received by lab	22012
Lab Job Number:	230011
Lab Sample Number.	866 00

Analyzed by	JB
Analysis date	2/21/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D'
Counting rules (ISO, AHERA, ASTM)	ÁH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filtor (ml)	

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		= no
		Туре	Primaty	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-3	MD												
	174-3	MD					A (60% cof	mf	5	-10/ de	hus		
	64-3	M				Fus	B =	o % cats	ust	5	70 % do	bus		
	K3-3	ND					_	, , , , , , , , , , , , , , , , , , ,						
	H3-3	M							Sp	/21/10				
B	K4-6	ND						7	7	/-//				
	H4-6	ND						/						
	64-6	MD												
	F4-6	ND												
	E4-6	ND					٥							

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confinnation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{A verage GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening